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FRAUD HAPPENS

CIOs rarely discover the insider crime that can ruin companies.
Here's what needs to change. 34

BY KIM S. NASH

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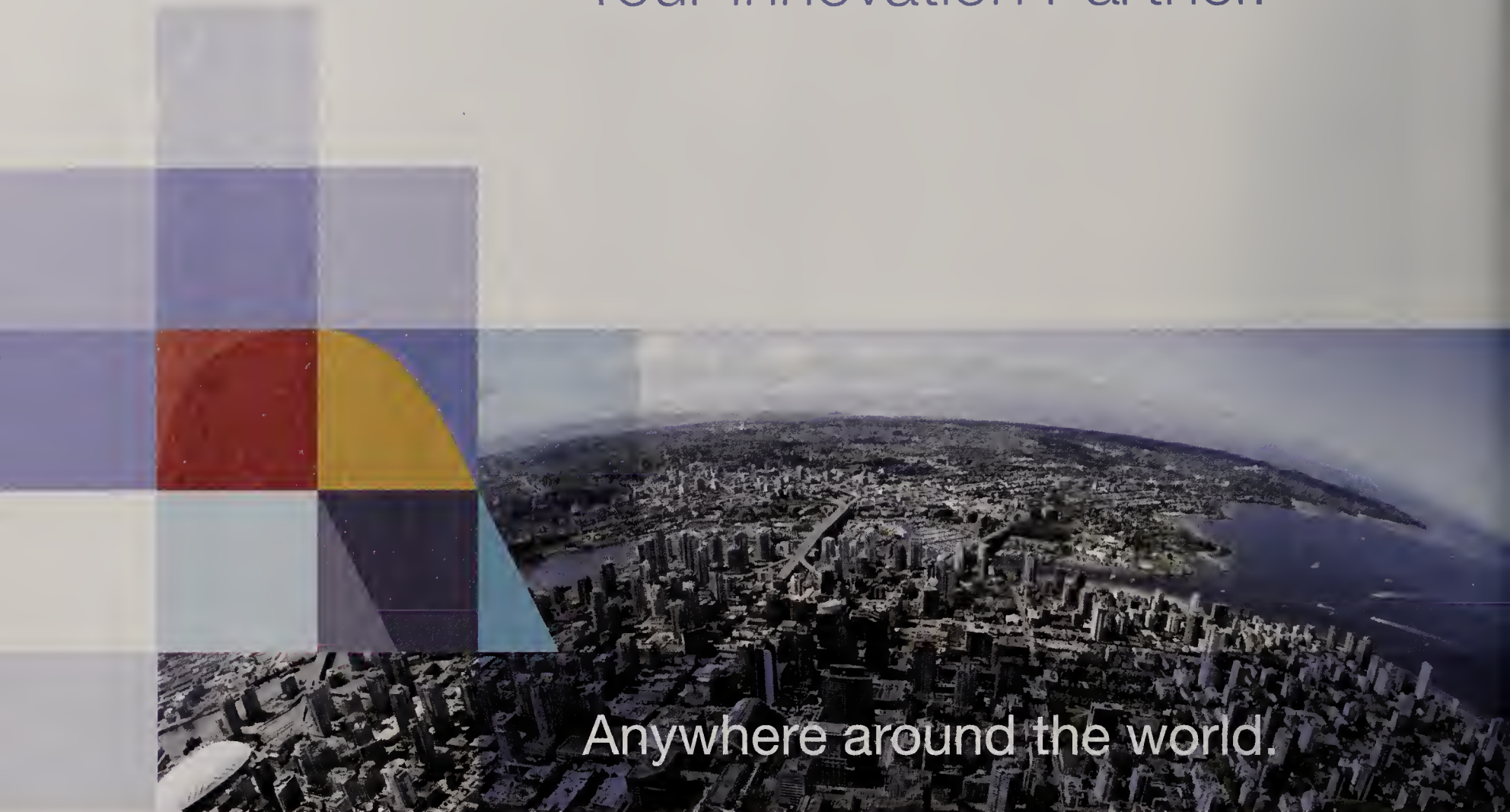
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COVER STORY CIOs rarely discover the insider crime that can ruin companies. Here's what needs to change.

BY KIM S. NASH



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FROM THE
EDITOR IN CHIEF

start

CHATTER

Everyone's Business

As the CTO of the Sesame Workshop (Big Bird and Elmo are part of his user base), Noah Broadwater was one of the most popular speakers at IDG Enterprise's recent Consumerization of IT in the Enterprise conference. (IDG Enterprise is the parent company of *CIO* magazine.)

But it wasn't just his duffel bag—packed with giveaways such as Grover dolls and Oscar the Grouch lunch boxes—that gave him such a natural advantage on stage. It was his frank advice to IT organizations scrambling to cope with the onslaught of consumer technologies, social media and mobility demands.

"Go talk to legal before you do anything," Broadwater said. "Once you have legal on your side...you can embrace tons of new technologies." He further urged IT groups to "stop treating users like idiots" in the realms of security and data protection.

"Users understand security better than you think. Explain to them what you're doing and why," he added. "IT is there to protect and to serve."

That sentiment resonated deeply with me and reminded me of the concerns I've heard so many CIOs express in recent months. What's the best way to serve the escalating demands of über-mobile, consumer-IT-crazed businesses while still protecting the company's data and intellectual property?

Our cover story in this issue ("Fraud Happens," Page 34) explores another aspect of the protect-and-serve duties that are inherent in the CIO's role: preventing and detecting insider crime. This is a tough subject to write about because few CIOs will speak on the record about it. Senior Editor Kim S. Nash found that basic technology safeguards are all too often missing in fraud cases. In more than 1,800 cases of insider financial crimes, she notes, "IT controls came in dead last" among the 11 methods of fraud detection identified by investigators.

As consumer technologies pour into the enterprise—and as unprecedented amounts of data are being accessed from mobile devices—now is the perfect time to raise these issues in your own company. (Go talk to legal.)

As we talked to various experts for this story, it became clear that no single executive or department can carry the full weight of anti-fraud activities. But the CIO emerges as a potentially powerful voice in making this everyone's business.

Maryfran Johnson, Editor in Chief, *CIO* Magazine & Events
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Defining Big Data

A new study from Echelon One shows that nearly half of IT leaders are concerned about big data, and more than half **lack the tools to properly manage data** in their IT systems. Senior Writer Thor Olavsrud concludes that without the right tools, a huge quantity of **data is basically garbage**. Most respondents to the survey—62 percent—said they already manage more than one terabyte of data and more is coming in all the time from sources such as sensors, transaction records, images, videos and social media posts. www.cio.com/article/700804

A Plus for Business?

Google+ recently gained its **100 millionth user**, but who is using it? Contributing Writer Jennifer Lonoff Schiff found that most members are probably individuals, not businesses, but Google hopes to change that. Schiff says Google+ can help your business if your company already uses Facebook and Twitter for **social media marketing**. A Google+ business page will **increase your ranking in search results**, allow you to video chat with customers, and provide **free focus groups** for new products. www.cio.com/article/700561

The World of Women CIOs

CIO Paradox columnist Martha Heller says that the last time she checked, a mere **nine percent of CIOs were women**, but women taking the IT helm at large companies has been big news lately. Heller highlights the new female CIOs of **Walmart, J.C. Penney, Intel and Dell**. There are also a few notable men in new CIO gigs, too, including at **Epsilon and Goodwin Procter**. blogs.cio.com/node/16859

Compiled by Editorial Assistant Lauren Brousell. Have a comment about a story in this issue? Go to www.cio.com/issue/20120401 or write to letters@cio.com.

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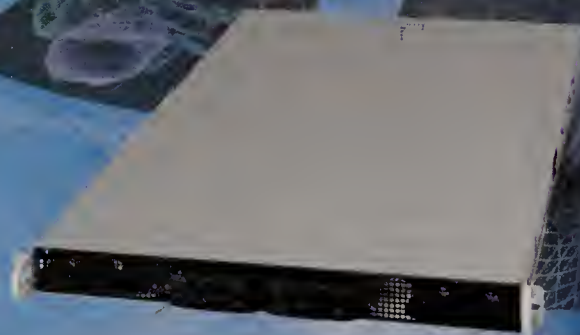
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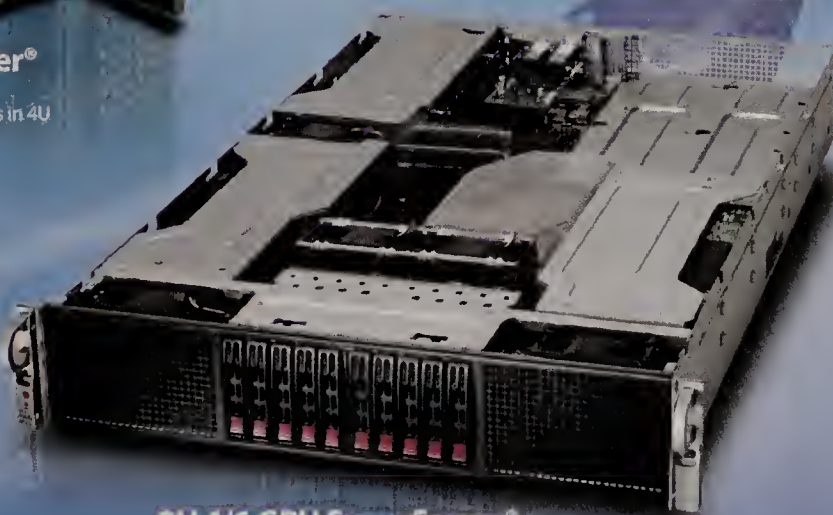
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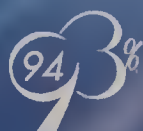
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Power of Convergence

New research demonstrates the significance of converged infrastructure as businesses race to out-innovate the competition.

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The relationship between business and IT is often strained. Business demands responsiveness, especially to new requests. Whereas IT struggles to simply keep existing applications running and deliver on agreed-upon SLAs. The solution is a converged IT infrastructure.

As technology becomes increasingly pervasive, many enterprises see a widening gap between what the business demands and what IT can deliver. IT simply can't keep up with the speed of business—lacking the agility to respond to business requests in a timely manner.

Fortunately, this all-too-common scenario does not have to be the reality. The answer for many organizations rests with deployment of a converged infrastructure environment. Converged infrastructure is a set of automatically provisioned IT services and applications utilizing interoperable resource pools of servers, storage, networking, security, power and cooling—all managed through a common management platform.

Done right, a converged infrastructure accelerates IT by shifting precious resources to innovation, readying for the cloud and delivering value to the business faster, explains Duncan Campbell, vice president of marketing for HP Converged Infrastructure. "To compete in the age of 'instant everything,' organizations need an IT infrastructure that enables agile and rapid service delivery while driving out costs. That's what converged infrastructure helps IT organizations accomplish."

And, moving to a converged infrastructure environment does not necessarily translate to a complete rip and replace, especially when embracing an open, standard-based solution set. "Organizations have a significant investment in IT already and understandably want to maximize their existing assets," he says.

THE SURVEY SAYS

The tangible benefits of moving toward a converged infrastructure are quite clear in the recent IDC Research report, *Measuring the Business Value of Converged Infrastructure in the Data Center*. Findings point to these three concepts:

■ **Rapid response:** Study results show that within a

traditional environment it takes an average of 20 days to respond to a business request for something new. However, in a converged environment the response time drops to five days, yielding a 75 percent reduction in service delivery time.

■ **Innovative shift:** Within traditional IT environments, operations consumes more than 70 percent of IT labor resources; less than 30 percent is used to enhance productivity, competitiveness and customer experience. Converged environments allow the IT organization to flip these numbers and focus on delivering the innovative solutions businesses require to compete.

■ **Uptime:** In a converged infrastructure, businesses go from an average of 10 hours of unplanned downtime to less than 20 minutes. That's a 97 percent reduction in downtime—an extremely important benefit as employees and customers demand access to IT systems 24x7, 365 days a year.

"As the study results demonstrate, the only way to effectively shift resources from operations to innovation is through infrastructure convergence," says Campbell.

BOTTOM LINE

As organizations become increasingly focused on utilizing technology to achieve a competitive advantage, infrastructure convergence is inevitable. The approach will ultimately define an organization's ability to succeed or fall behind. So having experienced partners like HP and Intel by your side—delivering open, standards-based solutions designed for convergence—can make all the difference.

To learn more about how your IT organization can benefit from a converged infrastructure environment today, and for additional research results, download the IDC white paper at www.convergedinfrastructure.com





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*Substantiation: HP white paper, *Measuring the Business Value of Converged Infrastructure in the Data Center*, October 2011
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FROM THE **CEO**

Flip the Switch

As the U.S. economy begins to brighten, it's reassuring to see spending in the manufacturing, retail, financial and healthcare sectors starting to respond. Conversations within the IT leadership community also seem to be lightening up, as IT priorities are rebalanced to include strategies for revenue growth and customer engagement.

Since the recession, technology executives have had their heads down, diligently executing on projects to consolidate, standardize, and optimize costs. Those efforts have largely centered on what author Geoffrey Moore aptly terms "systems of record," meaning the ERP, CRM, data center consolidation, virtualization and security systems underlying decades of increasingly efficient enterprise business processes. We couldn't do global business without them.

Yet many CEOs are now turning to CIOs to help them accelerate revenue growth and deepen engagement with customers. If that sounds familiar, it's no wonder. This is probably the third cycle in the past decade where you've been asked to flip the switch from cutting costs to generating revenue.

The difference this time is the amazing, innovative lineup of technologies now at your disposal. Walking the halls at our recent Consumerization of IT in the Enterprise conference in San Francisco, I was impressed by the levels of enthusiasm these technologies are generating.

Moore calls this latest wave of Web-based, customer-friendly, consumer-driven IT "systems of engagement," referring to their enormous effect on the way we collaborate and connect in our business and personal lives. The Big 5 fueling this new engagement, of course, are cloud, social, mobile, consumer IT and big data. All of them enable business, to varying degrees, to engage more meaningfully than ever before with an ecosystem of customers, partners and employees.

To stay relevant in the C-suite, CIOs must shift focus from systems of record to systems of engagement. It's clearly a question of when, not if, engagement will take primary importance.

Are you moving fast enough into this new era of engagement? What's holding you back? Is it budget, structure, talent, fear?

No matter. Your CEO expects you to rise to the occasion. It's time to flip the switch and engage.

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Cloud Spending Headed Up

Many CIOs say cloud services are a plus for business continuity and speedy deployment, but they still worry about security **BY LAUREN BROUSELL**

Six out of 10 U.S. companies already have at least one application in the cloud, and 71 percent expect to increase spending on cloud services in the next 12 months, according to a recent IDG Enterprise survey of 554 IT professionals, including 357 heads of IT.

Most respondents (64 percent) agreed with the statement that cloud computing will mean higher costs in the short term, but will save money in the long term.

Barr Snyderwine, CIO of Hargrove, an events management company, says using the public cloud is his way of keeping costs down. The company is using an online collaboration tool for document sharing because "it's so cheap I can't say no," he says. "We are probably saving money in the long run on the [business] continuity side."

In fact, 84 percent of the survey respondents cited business continuity as the top business driver for their cloud investments. Snyderwine says he is also looking to put Microsoft's Exchange in the cloud as part of his continuity plan. "The comfort of having completely redundant servers is very, very attractive," he says.

In the survey, respondents said other top business reasons for moving IT to cloud services include speed of deployment, gaining the flexibility to react to market conditions, and improving customer support.

Tim Walter, CIO of CrossCom National, a retail systems provider, has a different reason: He's moving company data into a private cloud in hopes of achieving greater data consistency and integration. "You can get systems in the same cloud to talk [to each other]," Walter says.

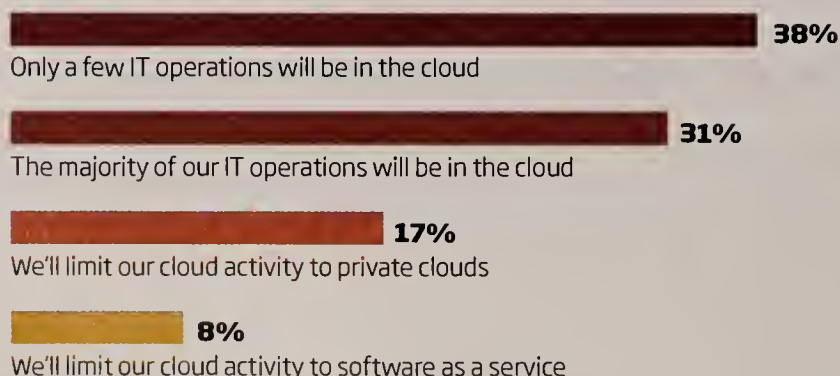
But putting data in the cloud also carries risks: 70 percent of the respondents said security concerns are the top barrier to their adoption of cloud computing.

Walter says one challenge is having data from different types of customers in the cloud, because each customer has different security needs. "We look at who requires the tightest [security] levels and try to work everyone else toward [those]," he says.

Contact Editorial Assistant Lauren Brousell at lbrousell@cio.com. Follow her on Twitter: twitter.com/lbrousell.

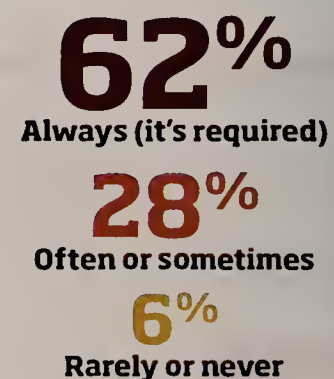
Five-Year Plans

What are your expectations for cloud computing over the next five years?



At Least They Asked

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Job Search Done Right

Networking online creates new headaches and new opportunities.

Here are four techniques for preventing missteps. **BY KRISTEN LAMOREAUX**

Executives exploring options outside their current company are often in need of job search etiquette tips. Especially since the immediacy and transparency of today's technology can easily create an uncomfortable situation. So how can you avoid being "that guy" while still incorporating social networking tools into your job hunt?

It's up to you to keep your name out there by conducting yourself professionally online.

A good first rule of thumb: If you find yourself hesitating before clicking send, stop and review what you're doing. Laying the right groundwork with your network can also help protect your reputation.

Organize your contacts by trust level. Say you've decided it's time to look for a new job and want to begin to contact people in your network. You should be building concentric circles based on trust levels and initiate contact with your core trusted resources first. But you may want to modify the tone of your conversation from, "Get me the heck out of here!" to "I'm seeking more challenge than my current company offers," depending on your relationship with your contact.

Never talk trash. Bashing your current employer to professional contacts is never acceptable. Too many networking conversations

begin with, "Of course this must be kept confidential, but so-and-so said..." Dishing dirt is infinitely appealing, but the world we work in is a small one. It's far too easy for your name to be sullied when you toss around negative opinions.

Be direct in your requests for help. Job seekers commonly make the mistake of being too hesitant to ask for help right off the bat. Don't simply ask networking contacts to keep you on their radar screen. Most of us have about 5,000 people on our radar screens that we've completely forgotten about. We all have good intentions when we use that phrase, but it's too passive to be effective. It's human nature to want to help someone in need, and people remember the times they're able to provide real assistance.

So make that easy for them. Imagine you contact a former CEO and tell

her you're being downsized. Here are two ways she could view that conversation after you hang up, depending on how you direct it: 1) "I got a call from Bob today. He's losing his job. [sigh] So many folks are being cut; the economy just sucks right now." Or, 2) "I got a call from Bob today. He's losing his job. He asked me for the names of three companies I respect so he could research them. I named X, Y and Z. I'm really glad I was able to help him."

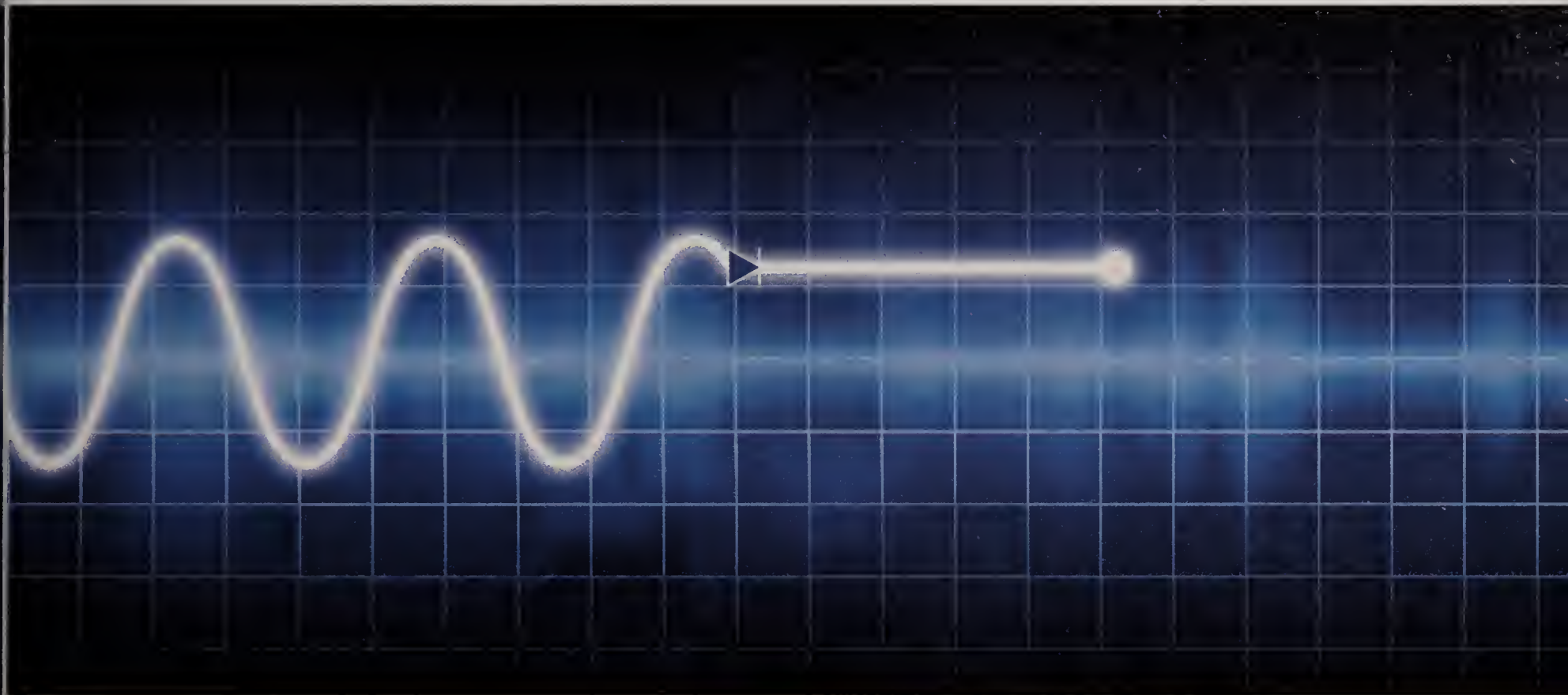
Which conversation seems more memorable? The yet-another-boat-anchor depressing one or the one that was action-oriented and positive? Develop a list of short tasks that will advance your search in tactical and practical ways. By keeping the tasks small and not too time-consuming, you're being respectful of people's calendars and increasing your chance for a positive outcome.

Be present online. Capitalize on tools such as LinkedIn and use your status updates wisely. Share an article once a month. Twice a month, swap out a book on your Amazon reading list. Regularly look for industry events or webinars and indicate you're interested in attending, or join a professional group.

It's up to you to keep your name out there by conducting yourself professionally online. Folks really read their LinkedIn network's updates. What you share can demonstrate your effort to improve yourself and position yourself as a thought leader.

Kristen Lamoreaux is president and CEO of Lamoreaux Search, which finds IT professionals for hiring managers.

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Buyer Beware

Three tips for keeping mobile devices safe from harmful apps

1 Research before you install: Vet apps by looking at reviews in the store offering the software. The more reviews the better, since this typically means more users have tested the app. You can also perform a quick Google search for the app's name or publisher. Minimal results should be a red flag.

2 Familiarize yourself with app permissions: Don't breeze past permissions screens intended to alert you to potentially sensitive resources that the app wants to access. According to antivirus software maker McAfee, if something seems odd—like a game that needs access to your address book—you can, and should, block the request. If an app won't work without being granted certain permissions, you need to weigh its risks and benefits.

3 Shop at reputable stores: It might seem obvious, but the simplest way to shop safely is to stick with your official app store. McAfee also notes Android users can block the installation of non-Android Market apps by unchecking "Unknown sources" in the Applications Settings menu. —Al Sacco



WORTH READING



BOOK *Sleeping with your Smartphone* By Leslie A. Perlow

Smartphones make work more convenient but hurt your productivity. Based on her research and an experiment at a Boston company, this Harvard Business School professor thinks managers should add "disconnected" time to the workday and shares easy ways to implement the policy. *Harvard Business Review Press, \$27.00*

quick FIX



I mishandled the rollout of an IT system, causing big political problems for my employer. How can I repair my reputation?

ALWAYS apologize and react quickly. Whatever your business or industry, things can and will go wrong. How mistakes affect the way you're perceived is determined by one primary factor—how you respond. If your response is weak, defensive or arrogant, the damage to your reputation will be far-reaching and impossible to control. If you own the problem and handle it swiftly and adeptly, the damage will be minor. Many leaders' reputations actually improve because of how they handle a crisis. Think of how Johnson & Johnson handled the Tylenol crisis in 1982 versus how BP dealt with the oil spill in 2010.

SOMETIMES you need to take your lumps and move on. Take Martha Stewart, for example. When she entered a federal prison, there was rampant speculation about the future of her company. But her comeback was remarkable. Upon her release, she hit the talk-show circuit, made light of the situation, and revealed her "delight" when prison officials put her in charge of cleaning. How did she manage to reduce the damage, and perhaps become even more admired? She faced the music, did her time, and moved on. You need to do the same.

NEVER say or do anything you wouldn't want on the front page of the *Wall Street Journal*. When you're in a leadership role, everything you do is more likely to be scrutinized. Use this litmus test: Would you still do something if you knew everyone would know? If that gives you pause, think twice before you speak or act.

Suzanne Bates is the author of *Discover Your CEO Brand*, an executive coach, and CEO of Bates Communications. Find her at bates-communications.com.



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Beauty and the Tablet

Cosmetics retailer Sephora gives mobile shopping a shot of glamour **BY KIM S. NASH**

Beauty is now in the hands of the tablet holder. Cosmetics, creams and gels retailer Sephora launched an app last year that's designed to leverage the crisp graphics capabilities of Apple's iPad and entice users not just to browse, but to buy. Now brick-and-mortar shoppers can use Sephora-provided iPads to access the app while they stroll the aisles of select stores.

Sephora is one of a batch of leading-edge companies hoping to capitalize on tablet commerce by building apps with the iPad in mind. While tablets still trail phones when it comes to mobile shopping, iPad users appear more likely to spend. According to an IBM survey conducted last year, iPad users who visited retail websites during the month of December converted their browsing to purchases 6.3 percent of the time, more than double the 3.1 percent for users of other mobile devices.

But selling on tablets is fundamentally different from selling on smartphones and requires a carefully thought-out design. Functions such as embedded video and page-swiping instead of scrolling, for example, define tablet navigation. ▶▶▶

►► **Tablet commerce** Continued from Page 19

Tablet shoppers are also more likely to use the device in comfortable surroundings. Bridget Dolan, vice president of interactive media at Sephora, says its app was designed to weave together content and commerce with the expectation that customers would be in a different setting than those using a PC or laptop. "At your computer, you cut to the chase. You're probably at work. On the iPad, you're on the couch or at a coffee shop," she says.

Owned by Moët Hennessy Louis Vuitton, Sephora has 550 stores in the United States and Canada. The beauty company wants its app to immerse customers in glamour, Dolan says, showing palates of eye shadows from Paris, Rome and Tokyo and pink rouges displayed like little breaths of luxury. Sephora's magazine-style catalog emphasizes the iPad's page-flipping navigation and integrates with its website's existing e-commerce infrastructure. Customers can browse beauty and fashion content and buy the products that appeal to them in photos and articles. They can watch videos that show how to use the products, including one that teaches viewers how to create a "smoky eye." The app uses the device's camera to create a virtual mirror for users to test techniques.

One mistake some companies make in tablet commerce is providing only a subset of the features available on the regular website, says Alex Schmelkin, president of Alexander Interactive, a Web design firm. To simplify the tablet app, Schmelkin says, companies might omit corporate information or limit search capabilities. But having two different experiences confuses and frustrates customers, he says. Companies should also optimize their websites for tablet navigation by enlarging text and images and minimizing the use of Flash, he says.

"We're creating [tablet] content that inspires shopping," says Dolan. "We can leverage all the cool features of an iPad that would allow you to experience [shopping] in a different way."

Senior Editor Kim S. Nash can be reached at ksnash@cio.com. Follow her on Twitter: twitter.com/ksnash99.

"We're creating [tablet] content that inspires shopping."

—Bridget Dolan, Vice President of Interactive Media, Sephora

crunch

Youthful Indiscretions

Seven out of 10 young employees who are aware of their companies' IT policies acknowledge breaking those rules.

Most common reasons for flouting IT restrictions:

- 1** Belief they aren't doing anything wrong
- 2** Need unauthorized applications for work
- 3** Policy isn't enforced
- 4** Too busy to think about policies
- 5** Inconvenience of following policies

SOURCE: CISCO SURVEY OF 2,800 PEOPLE UNDER AGE 29, DECEMBER 2011



Travel With Less Stress

Though we may not have flying cars and jetpacks in the near future, a new study suggests there will be "transformative technologies" that make travel less stressful and chaotic in 2020 than it is today.

For example, smartphone users will be able to quickly check in at airports, according to the report by The Futures Company, a consultancy hired by global travel technology vendor Amadeus IT Group to study the future of travel. The report also suggests the next decade could see RFID tags used to keep track of luggage and intelligent tickets that update the traveller about delays or changes.

In the study, travellers say they'd like online access to their own collection of music and movies, as well as personalized travel guides that would recommend the best restaurants and tourist sites based on peer reviews and favorite bloggers.

The industry should develop services that enhance the travel experience, says Eberhard Haag, Amadeus's EVP of global operations. "By moving away from focusing solely on the transaction, travel providers will be able to build longer-term, higher value and more profitable relationships with travellers."

—Mitch Betts

.....**55%** CIOs who won't develop a mobile app this year. Robert Half Technology**40%** How much more revenue was generated by BlackBerry apps than Android apps. Vision Mobile**115** Kindles Amazon sells per 100 paperbacks. Amazon

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TRACE3 OUTLIERAWARD

On February 2nd 2012, Trace3 named it's first ever Outlier Award winner at a gala ceremony in Las Vegas. The event drew 400 attendees and featured a performance by famed comedian Kevin Nealon. Of the 7 finalists, this years' winner is KEN VENNER who is currently CIO of SpaceX, an aerospace firm focused on private and commercial space transport. Ken was chosen because of his unique stance on how IT should be like air. It is not only a philosophy he established while CIO at Broadcom, but also continues to share with the IT community.

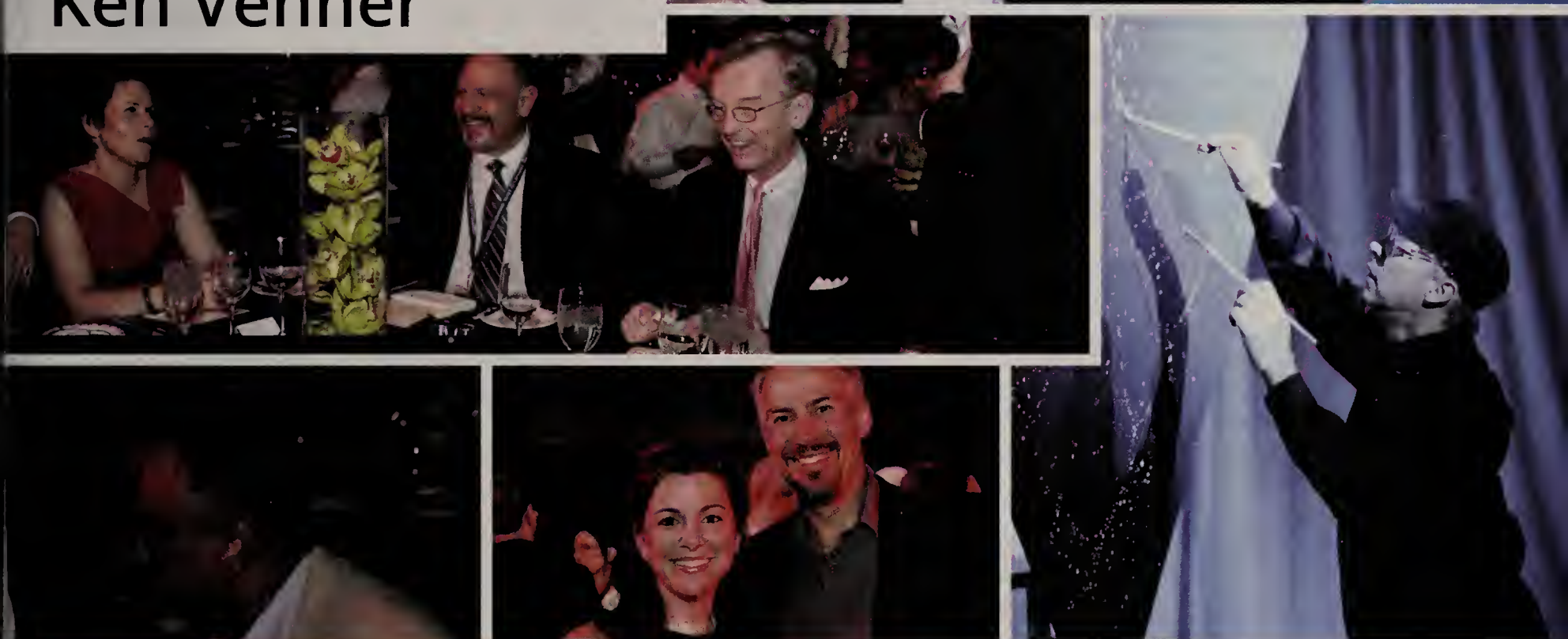
By being named the Trace3 Outlier Award Winner, Trace3 has donated \$10,000 in Ken's name to CHOC Hospital – an OC based Pediatric Hospital that specializes in neuroscience and the continued fight of children's cancer.

Trace3 is taking nominations for the 2013 Outlier Awards. Please go to: www.trace3.com/awards/ to learn more.





2012 Outlier Award Winner
Ken Venner



To see videos of this years ceremony or to nominate for 2013, please visit

www.trace3.com/awards/



TRACE3

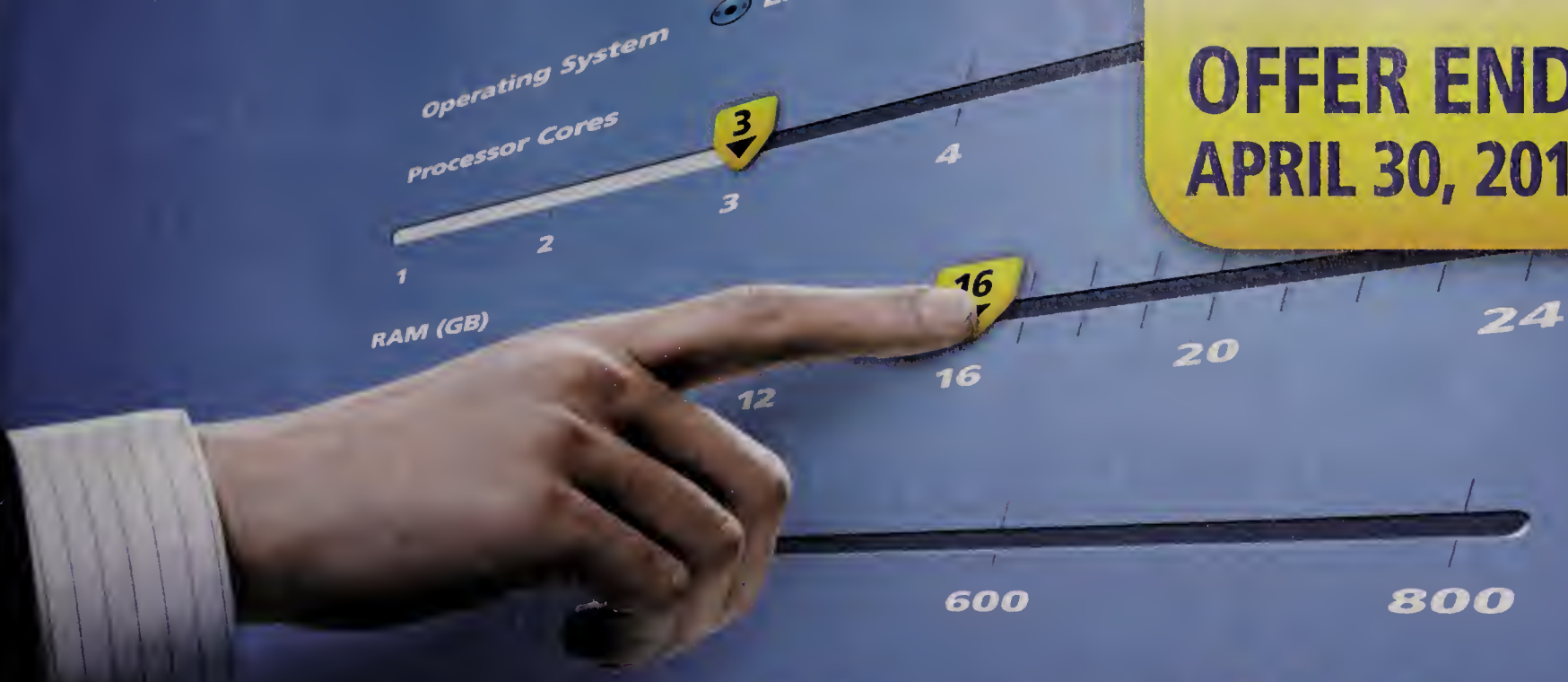


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Greg Laugero is co-founder of Industrial Wisdom. He helps companies turn their ideas into real products with great user experiences. Follow him on Twitter: twitter.com/prodctstrategy.

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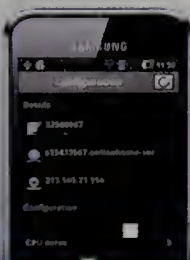
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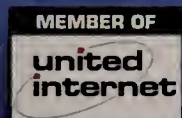
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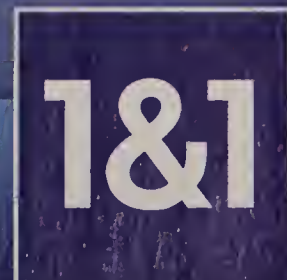
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City Arms Citizens With an App

To free citizens trying to report problems using a cumbersome phone system, this public-sector CIO went mobile **BY LAUREN BROUSELL**

MOBILE To report a pothole that could be harmful to your car in the city of Cambridge, Mass., citizens used to have to call city hall and then navigate a series of steps to be connected with the department or person responsible for fixing the issue.

Trouble was, the average caller didn't know who they needed to reach and often ended up speaking with the wrong person, leaving the problem unresolved. CIO Mary Hart knew citizens needed an easier way to report their concerns.

Hart met with her internal strategy team to brainstorm ideas and then partnered with mobile app developer iSite to create an app for iPhone and Android. The Cambridge iReport app allows smartphone users to report issues in real time and in fewer steps.

Hart first piloted Cambridge

iReport through the city's website to see how much activity it would get. She received 80 reports within the first month and made the decision to skip a pilot of the mobile version and go straight into development.

Rolled out in October 2011, Cambridge iReport can be downloaded for free through the iPhone or Android app store. Hart said she chose to deploy the app on the most popular smartphones and plans to include others, excluding BlackBerry, depending on how much activity the app generates.

The app lets citizens include photos of potholes, burned-out street lights, graffiti and rodent problems, or just send text descriptions. Google Maps marks the location of the issue, and if it's within six miles of Cambridge, it gets pulled into the city's work-order system. From there, it's

assigned to the proper city worker.

To close the loop, the citizen who submitted the issue will get a confirmation email saying her complaint was received and can later check on the progress of the problem.

The city spent about \$45,000 developing the app and has gotten nearly 500 iPhone downloads and 139 Android downloads through the end of February 2012. In this time, 478 tickets were submitted and 429 of them have been resolved.

Hart has been working to market the app to encourage more users to download it. The city is also looking to allow citizens to report more types of issues, such as missing street signs or excessive noise.

Contact Editorial Assistant Lauren Brousell at lbrousell@cio.com. Follow her on Twitter: twitter.com/lbrousell.

Mobile Coupons Light Up With New Smartphone Technology

COMMERCE San Francisco-based Mobeam, a company specializing in light-based communications technology, recently announced a partnership with corporate giant Procter & Gamble aimed at bringing to market an all-digital mobile coupon system. Mobeam's technology makes it possible for existing retail point-of-sale systems to read electronic coupons presented on a mobile phone.

Given P&G's reputation as a bellwether company in the consumer products industry and a sophisticated user of IT, the new partnership bears watching. If other players in the smartphone and retail ecosystem go along—not a sure bet—the joint project could revolutionize the use of mobile coupons.

—Mark Rowh

Bad News for Google Wallet

SECURITY Malware researcher Zvelo reported a "brute force attack" involving Google Wallet in early February, just as Google is trying to convince Android owners to feel comfortable using near-field communications (NFC) capabilities on their smartphones to pay for goods and services. (For more on NFC, see "5 Things You Need to Know," Page 30.)

Google first launched Google Wallet in September, on the high-end Samsung Galaxy Nexus from Sprint. The service is expected on additional Android devices in the near future.

But according to Zvelo, jailbroken devices could easily be tapped for Google Wallet PINs, giving exploiters access to stored payment card information. TheSmartPhoneChamp.com says even unrooted phones are vulnerable. It seems Google Wallet PINs can be changed on a device without any tie to a user's Google account. "In other words, they'd be able to add your card and have full access to your funds."

—Al Sacco



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ERP on Speed

Why a small drug maker on a tight deadline chose prefab ERP

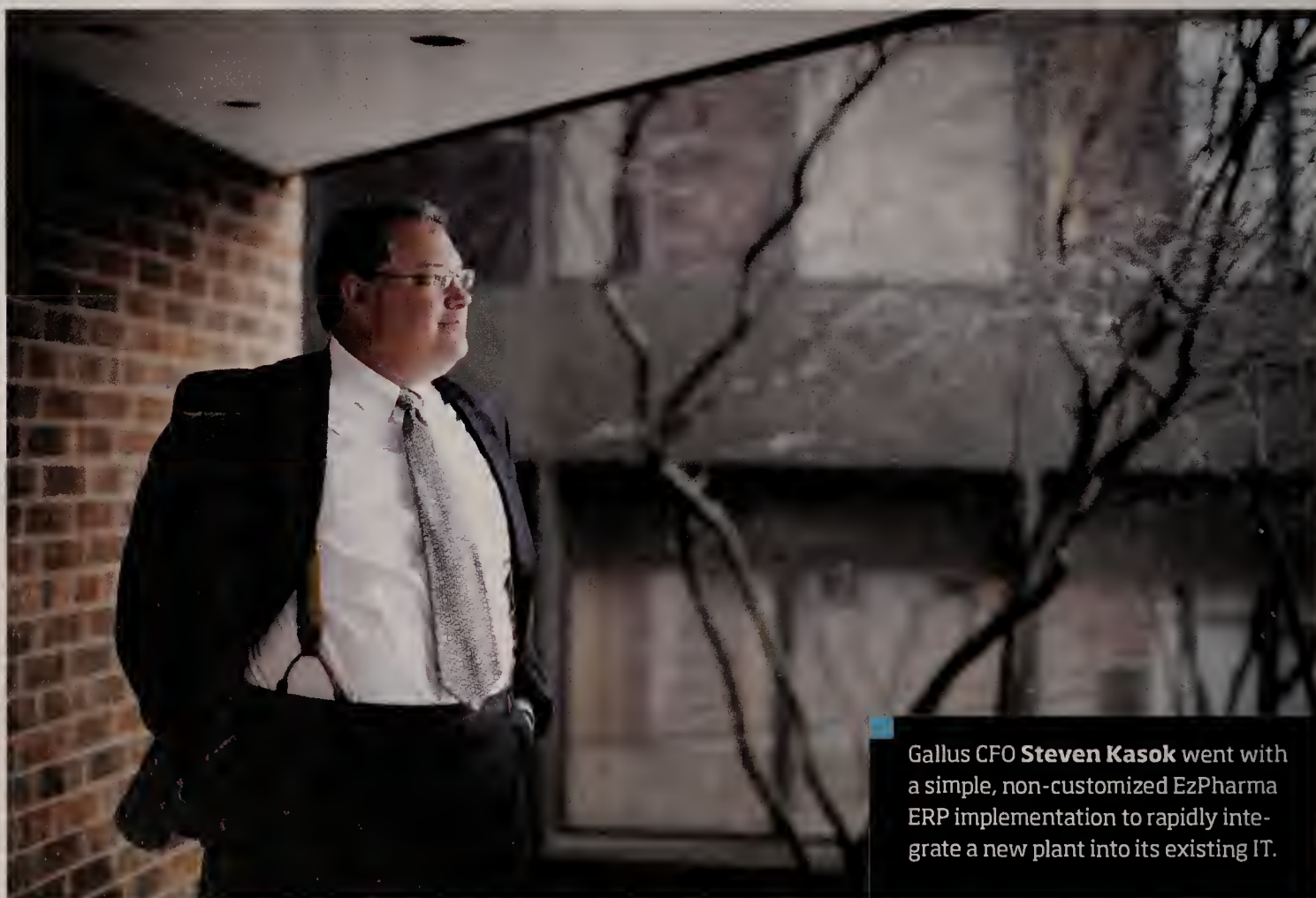
BY STEPHANIE OVERBY

"ERP" and "rapid implementation" were once rarely uttered in the same sentence. But smaller enterprises in particular need affordable, reliable software that can still be rolled out quickly.

Gallus BioPharmaceuticals is one ERP customer that took a faster, cheaper approach. The nascent contract manufacturer of biopharmaceuticals acquired an existing, FDA-approved biologics plant from Johnson & Johnson last year and had 120 days to wean itself off the corporate giant's IT infrastructure—including desktops, networks, phone systems and software.

Migrating from highly customized, well-supported SAP software to its own ERP system, however, was a big challenge. Gallus uses living cells to make medications that treat conditions such as arthritis and psoriasis. It's a highly regulated industry, so the transition really had to be seamless.

"We have to track everything from preventative maintenance to cell-performance data," ►►



Gallus CFO **Steven Kasok** went with a simple, non-customized EzPharma ERP implementation to rapidly integrate a new plant into its existing IT.

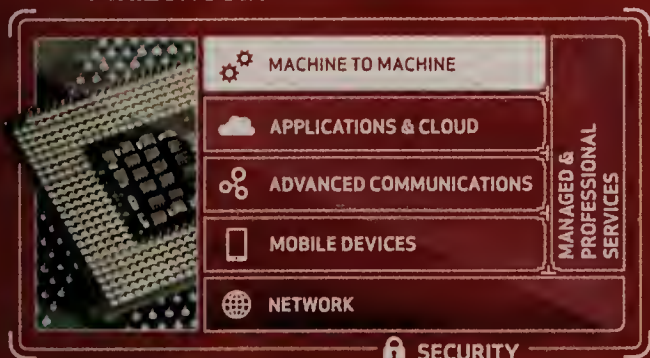
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explains Gallus CFO Steven Kasok. That needed to continue from the day Gallus signed the Johnson & Johnson deal right through the day after SAP access was shut off. After all, says Kasok, "the cells didn't know they were sold."

The CFO, who began his career in IT at GE and oversees Gallus's technology function, knew the 17-week implementation schedule was tight, particularly given the company's bare-bones IT staff. The key? "You go with a simple, non-customized implementation," says Kasok.

Kasok chose EzPharma, a pre-configured ERP package built on SAP, based solely on the viability of the vendor. "We have the same regulatory and quality framework as large pharmaceutical clients, so it only makes sense to run on the same system background," says Kasok. "The real question is, Can you afford it?"

There is no cut-rate ERP suitable for the drug industry, so Kasok bit the bullet on EzPharma's "couple million dollar" price tag, shaving costs on the implementation itself. He hired consultants from Answerthink, an SAP consultancy, to manage the rollout, but used internal staff on the project as much as possible and vetoed customization in almost all cases. "You can make modest changes in your own operating systems to meet the standards of the off-the-shelf software," Kasok says.

Because Gallus manufactures products for the commercial market, the regulatory bar is set higher than it is for other manufacturers. To meet its complex tracking and documentation requirements, the company required one bespoke element of software to support its maintenance and calibration tracking procedures. Other than that, what it rolled out last year was what came in the box.

"It's a big cultural shift to say, 'We're going with a standard system,'" says Kasok. "The consultants would talk about [making changes in] the next phase. But I always said, 'This is the only phase.'"

Master data migration proved tougher than expected, says Kasok, who is more familiar with the straightforward flat files of his IT days. "Intense data cleaning added stress—and about 30 days—to the project."

"In an ideal world, we would have implemented just what we needed instead of what [Johnson & Johnson] already had," Kasok says. For example, Gallus will now manage multiple customer inventories. "We weren't able to do as much up-front planning as we would have liked."

"The reality is, there will be more," which Kasok admits sounds suspiciously like a phase two. "We did this as cost effectively as possible, and the return is a business that continues to run."

Stephanie Overby is a freelance writer based in Massachusetts.

Things You Need to Know

NEAR-FIELD COMMUNICATION

1 IT'S CHEAP AND EASY. Near-field communication (NFC) is a short-range wireless transmitting technology that connects a smartphone with a receiver to transfer data. NFC's big potential is in mobile payments, which are convenient and cost saving, so they're attractive to users and companies. Sandy Shen, an analyst at Gartner, says NFC appeals to a variety of industries because "it supports any services that require data transfer and authentication."

2 ADOPTION SEEMS INEVITABLE. Chris Silva, an analyst at Altimeter Group, says NFC is the natural next step for smartphones. But widespread adoption requires that more devices include the technology and more merchants support its use for payment. Today, smartphone users make up less than 50 percent of the mobile market and Apple and Android do not yet offer NFC, though the iPhone 5 is expected to include it. RIM and Samsung are among its early adopters, but it's unclear whether it can be added to existing devices.

3 IT'S A HOT POTATO FOR ENTERPRISES. Businesses, credit card companies and cell phone providers are all debating who should handle the billing. "If your Verizon bill has [a charge for] coffee on it, who's responsible?" Silva asks. Right now, service providers and manufacturers control whether to include NFC on their phones and whether their billing systems process payments. But IT in the enterprise will have to sort out the problems caused by the personal use of corporate devices and deal with the liability that mobile payments could create. "From a policy standpoint, it's more complicated for IT," Silva says.

4 IT'S ALREADY IN USE OVERSEAS. Silva says NFC is taking off quicker outside the United States and western Europe. For example, in Japan, people use a form of NFC called FeliCa to pay with their phones, and the purchases appear on their phone bills. In the United States, billing agreements between vendors and credit card companies have caused conflict. Thomas Husson, an analyst at Forrester Research, adds that the technology is performing well in Japan in part because mobile providers offer discounts on NFC phones to consumers.

5 SECURITY RISKS COME STANDARD. People will lose devices, which is NFC's biggest security risk and, Silva says, a big barrier to consumers adopting NFC. Arizona State University recently explored using NFC-enabled smartphones as dorm keys, and it sees potential for both big savings and security concerns. Next it will test security improvements, such as the credentials app timing out after 30 seconds. (For more on NFC security, see "Bad News for Google Wallet," Page 26.)

—Louren Brousell

Your Rivals May Share Secrets on Social Media

For several years, companies have used software tools to monitor what people say about them in social media. The new twist: Companies are tapping the social media stream to learn valuable information about competitors, says Richard Plansky, senior managing director at Kroll, a risk consultancy that offers corporate intelligence programs.

"Social media moves a large

portion of what used to be private information into the public sphere," says Plansky. "And that makes it much easier to gather information about companies' activities."

Product specifications, product testing, promotional offers, financial data, recruitment efforts, layoffs, industry demographics and customer satisfaction levels are just some of the details that can be gleaned from Facebook profiles, Twitter feeds and blog posts.

"A lot of the data is innocuous in little chunks, but when combined with lots of other tiny pieces of information, it gives you a real big window into a company," says Shane MacDougall, a partner at Tactical Intelligence, a consultancy.

However, compiling those details is meaningless if a company

doesn't know how to sort through them with a strategic goal in mind.

"It's really about good analysis that draws you to a very singular, unique or eye-popping solution that will allow you to make a decision a little faster and a little better than your competition," says Leonard Fuld, founder of Fuld and Co., a competitive intelligence consultancy.

Experts agree that the hardest part of mining social networks is avoiding information overload. "You have to decide what are the key things that you really want to know about your competitors—and what things you're not going to watch right now," says Lisa Dreher, a vice president of marketing at Logicalis, a systems integrator.

—Cindy Waxer

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— Lance Locher, Founder, Clear Channel-TTN

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Government IT's 'Perfect Storm'

Budgetary concerns and cloud computing have combined to make sharing services across government agencies a reality **BY KENNETH CORBIN**

Federal tech chiefs have long envisioned an environment in which agencies' storage and applications are hosted and shared throughout the government. But now officials are laying the policy foundation for a major cloud migration over the next several years, according to David McClure, the associate administrator of the General Services Administration's Office of Citizen Services and Innovative Technologies.

"We've been trying this for the last couple decades," McClure said in remarks at the Software and Information Industry Association's annual Cloud/Gov conference.

"I think we now have a perfect storm. We have a budget crisis, a new wave of technology and a new generation of CIO and IT leadership in the federal government that is very open to this," he said.

McClure is one of the driving forces behind FedRAMP, the federal

government's program to develop a uniform framework for federal cloud solutions, dealing with the security, assessment, privacy and procurement considerations of new deployments.

FedRAMP, with its "do once, use many times" mantra, is in the pre-launch phase. The initial phased roll-out is scheduled to begin in June.

Several government bodies are collaborating to develop the initiative, including the Departments of Defense and Homeland Security, the CIO Council and the National Institute of Standards and Technology (NIST).

McClure says developing a common set of controls for cloud services across departments and agencies is FedRAMP's first priority, though the project is not seeking to rewrite the security standards stipulated by NIST and the Federal Information Security Management Act (FISMA).

Instead, FedRAMP aims to put

an end to the current situation in which each agency contorts the existing standards to suit its own ends, thereby achieving compliance but falling short of the common IT security framework that NIST and FISMA attempted to create.

The push to migrate to the cloud comes with an ambitious effort to consolidate federal data centers, reducing the government's IT capital and operating expenses while making the technology apparatus more environmentally friendly.

FedRAMP will also seek to establish a group of third-party assessment organizations that will evaluate cloud solutions slated for government deployment. Once in place, the systems deployed under FedRAMP will be subject to monitoring by the Department of Homeland Security.

Kenneth Corbin is a freelance writer based in Washington, D.C.

Amazon Cuts Cloud Prices to Stay Competitive

Amazon Web Services (AWS) has cut its prices for the 19th time in six years in a bid to fend off competition from the likes of Microsoft Azure and Rackspace.

"AWS works hard to lower our costs so we can pass those savings back to our customers," the company said in a blog post last month. "We look to reduce hardware costs and innovate in many other areas of our business so we can be more efficient."

This has resulted in a "significant price decrease" for Amazon's Elastic Compute Cloud (EC2), Relational Database Service (RDS), ElastiCache and Elastic MapReduce, the blog post continued.

While Amazon, like other cloud infrastructure service providers, allows users to purchase computing power by the hour, it also offers Reserved Instances, where in exchange for paying for a longer fixed term, customers get lower pricing.

The new price cuts vary according to geographic region, with costs for EC2 Reserved Instances falling up to 37 percent. On-

demand pricing will see a more modest cut of up to 10 percent.

Meanwhile, costs of new Reserved Instances of Amazon RDS, which provides a scalable relational database powered by either MySQL or Oracle, will drop up to 42 percent, while on-demand pricing will be lowered by up to 10 percent. Also announced were price changes aimed at large enterprises.

"One misperception is that while EC2 is a phenomenal deal for smaller businesses, the cost-benefit [ratio] may diminish for large customers who achieve scale," the blog states. "Those who take the time to run the numbers see significant cost advantages regardless of the size of their operations."

To support this, AWS is rolling out an option called Reserved Instance Volume Tiers. If you own more than \$250,000 of Reserved Instances, you qualify for a 10 percent discount, while more than \$2 million qualifies you for a 20 percent discount.

—Chris Kanaracus

VIEWPOINT


Benny Kirsh

VICE PRESIDENT AND CIO,
INFOBLOX, INC.

Benny Kirsh, vice-president and CIO of Infoblox, previously held several Executive CIO positions and was directly responsible for the successful implementation of major transformation projects. As CIO of The Cooper Companies, he led a team of IT professionals and was responsible for all Global IT strategic planning and execution. Prior to that, he was the first CIO at Kyphon, where he was responsible for building a growth-focused IT foundation.

FOR MORE INFORMATION on leveraging IT automation to gain faster time to value, check out the Webcast **"The CIO's view: Time to Value through Automation"** at www.cio.com/webcasts/infobloxvalue

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The CIO's View: Delivering Time to Value Through Automation

In August 2011, Benny Kirsh was named VP and CIO at Infoblox, an industry-leading developer of network infrastructure automation and control solutions. With more than 25 years of experience, Kirsh is responsible for driving strategic advancements via the company's IT infrastructure and applications. Now more than ever before, IT professionals like him are being asked to deliver strategic value by responding quickly to dramatically changing business demands. But in today's tight economy, they must do so with flat budgets and staffing levels. IDG recently sat down with Kirsh, who explained how corporations can meet those conflicting business imperatives.

Time to Value has become a catchphrase in IT today. What does the term mean to you?

Traditionally, IT has enabled companies to change the way they do business. Investments in IT were high, with cutting costs and a positive ROI as the main objectives. Now,

They expect the same level of responsiveness from IT. Second, technology is becoming more complex, so we must constantly simplify the management of our systems. Third, because of changing business needs, IT is required to do more with less. And finally, we are expected to provide a high level of quality solutions fast enough to support new business initiatives. Balancing all these different drivers requires us to be more creative and innovative.

How is automation beneficial in improving your ability to deliver Time to Value?

Automation speeds up Time to Value. The biggest benefit is to the network. Infoblox's solution successfully reduced the complexity of our network and consolidated all the information gathered from different network devices and different vendors onto one pane of glass for our network engineers to work with. In the past, experienced network engineers had to perform routine, time-consuming mainte-

"Automation is key to realizing faster Time to Value."

the focus is on getting projects done faster, meaning shortening lead times and responding to changing business needs speedily. With businesses promoting themselves in dynamic ways, IT has to be agile enough to accommodate rapid changes. In the past, a rollout of solutions was a periodic event with long lead times. Today, public and private clouds and the consumerization of IT have changed expectations. So for us CIOs, Time to Value means rolling out systems and new solutions faster with shorter lead times — while remaining focused on cutting costs. As a business partner, IT has to understand the needs of the business and stay ahead of the curve, introducing new technology as needed and being a catalyst for change within the corporation.

As a CIO, what are the challenges you face in delivering Time to Value?

The four challenges are quite clear. First, business units' expectations are increasing. During lunch, employees download an app from the cloud for \$50, and they are up and running.

nance activities, such as upgrades or bug fixing. Increased automation lets us hand these tasks to our junior engineers and/or the IT support group, freeing up senior staff to work on more strategic initiatives. That drives costs down and delivers a better Time to Value.

Please tell us about your experience implementing automation at Infoblox.

By embracing the private cloud for speedy deployment of computer power, we are providing the Engineering department with the capability of self-provisioning virtual servers without IT involvement. Using the private cloud in IT, we recently deployed a new reporting tool that would previously have taken weeks. Now, thanks to virtualization and the automated provisioning of IP addresses provided by the Infoblox solution, it took just days. The move from manual processes to self-provisioning has enabled the IT team to support our organization's changing business requirements. Automation is key to realizing faster Time to Value.

FRAUD H A P P E N S

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CIOs rarely discover the insider crime that can ruin companies. Here's what needs to change.

BY KIM S. NASH

Yuan Li knew what she wanted and how to get it. For 32 months, starting in October 2008, the 29-year-old research chemist at Sanofi-Aventis downloaded trade secrets from the pharmaceutical firm. Li had worked for Sanofi, which makes the allergy pill Allegra and sleeping pill Ambien, for more than two years when she started to steal data. Her target: five chemical compounds that the company had kept secret for possible use in future drugs.

She knew which database to query to download the information to her work laptop, and from there she emailed it to a personal account. Sometimes, she loaded a USB flash drive with material. Li, a Chinese national, then put the information up for sale through a pharmaceutical company that she partially owned, whose parent is based in China.

Sanofi helped investigators from the FBI and the U.S. attorney in New Jersey to prosecute Li. In January, she pleaded guilty to theft of trade secrets and is due to be sentenced this month. She faces up to 10 years in jail and a \$250,000 fine.

Sanofi declines to be interviewed about the technology and policies it uses to detect and prevent corporate crime, including Li's long-term theft. "The measures we had in place actually contributed to the successful outcome of this particular case, and we are continuously looking for ways to improve security," a spokesman said in an emailed statement.

Experts say this is a textbook example of insider crime and, perhaps, of IT failure. Just as no one knows what goes on inside someone's marriage, outsiders can't say with certainty what goes into someone else's IT strategy. Sanofi could have done everything right and still been victimized. That happens.

But too often in cases of insider crime, basic technology safeguards are ignored or missing. CIOs can't be proud to learn that of 11 methods of detection identified in 1,843 recent fraud cases studied by the Association of Certified Fraud Examiners (ACFE), IT controls came in dead last. They are the least likely means of identifying wrongdoing, responsible for just 0.8 percent of cases, the ACFE says. It's more common to find out by accident (8 percent), from the police (2 percent) or even by confession from the perpetrator (1 percent). Tip-offs are by far the most common way authorities discover corporate crime, at 40 percent. Those findings have been consistent for a decade.

There are many reasons that IT falls down on the job. For one thing, most corporate systems aren't designed from the outset with fraud surveillance in mind. Plus, throwing a lot of money and people at fraud prevention doesn't get senior executives excited. Conventional wisdom has it that the tighter the controls, the less efficient the company. Company leaders therefore decide to accept some financial loss through crime as a cost of doing business.

PHOTO BY STEPHEN VOSS

A full-page photograph of Carl Tidwell, a middle-aged man with glasses, wearing a dark suit, white shirt, and a patterned tie. He is standing outdoors, leaning against a dark, textured wall. To his left is a curved brick wall. The background shows some dry bushes and a clear sky. The lighting is dramatic, with strong shadows.

Carl Tidwell, CIO of the American Type Culture Collection, tries to educate employees about the warning signs of fraud, such as people living beyond their means.

And to their detriment, companies often split the task of fraud-fighting among siloed groups. Internal audit does one thing; compliance does another. IT supports the silos, but there's no coherent, companywide plan, says Paul McCormack, an investigator and executive vice president at Connectics, a fraud-prevention consultancy.

Choosing a combination of technologies and policies to thwart the darker parts of human nature requires a continuous risk-benefit calculation. CIOs can change the equation with new thinking and new technology, starting by promoting the notion that fraud prevention is everyone's business, says Marshall Romney, a professor of information systems at Brigham Young University who has studied corporate fraud for three decades. For CIOs, that means spreading the word that detection and prevention don't have to make a company less agile.

And anti-fraud efforts are far more effective if major IT systems are configured with surveillance and analysis capabilities from the start. Advances in big data analytics, meanwhile, let CIOs create systems to sift through billions of transactions, customer interactions and employee activities to spot the buds of corporate crime before it blooms. Specialized vendors such as FICO, Fiserv and NICE Actimize use neural networks and scenario matching to detect financial crimes, a \$2.9 billion software market expected to grow 8 percent per year through 2015, according to research company IDC. IBM, SAS and other enterprise players also offer some fraud-management capabilities.

To make the best use of such tools, CIOs must elevate the discussion of fraud fighting, pouring much more detailed information into the risk-benefit analysis, Romney says. Involve all departments—especially operations, audit and legal—to consider factors such as economic conditions, business outlook and the cost of the programs in hard dollars, he advises. Make informed decisions about the loss of business agility that security technology can bring. Realize that what works in one industry won't in another. And that each CIO must deal with his company's proclivities.

"This is a high-level conversation that has to go all the way to the board and CEO," Romney says. CIOs who balance these variables can stop, prevent and maybe even predict insider crime, saving serious money and avoiding immeasurable damage to the company. But first they must reform some outmoded approaches.

Billions Lost, Poof, Gone

Humans think up all sorts of crime, from stashing office supplies in a briefcase to hiding money under layers of complex computerized investment transactions. "If you operate as a company, you will have fraud," says McCormack, who

Would You Speak Up?

A consultant says CIOs may be hesitant to report suspicious activity

Why don't CIOs turn in more insider criminals? No one suggests that CIOs routinely cover up corporate crime, but management pressures may inhibit CIOs from acting on their suspicions early in a fraud scheme.

It's rare to happen upon a digital smoking gun that incontrovertibly proves a corporate crime. It's later, during a formal investigation once auditors know what they're looking for, that the obviously damning evidence is uncovered. Early on, though, a CIO might notice something amiss. Perhaps a network activity log shows unusual patterns or some entries in the general ledger look off. CIOs may hesitate to step forward, feeling they don't know enough about the intimate workings of finance, says Jim Anderson, a management consultant at Blue Elephant Consulting.

"They think, 'I'm probably wrong. I probably just don't understand it,'" Anderson says. He adds that such self-doubt may be more common in CIOs who report to CFOs, which is about 23 percent, according to our annual State of the CIO survey.

Also, bringing up vague concerns could mar the relationship between the CIO and whomever he tells—and certainly whomever he accuses, Anderson says. To avoid that, the CIO might sweep aside his ideas and assume, like so many professionals do, that internal and external auditors will catch anything untoward.

Finally, many companies lack a clear process for reporting suspected wrongdoing. It may seem obvious that someone should go to a manager or the human resources department, even the CEO. But without a well-known policy for how to handle the situation, some employees—even CIOs—will do nothing, Anderson says. If someone is busy with everyday work and unsure of himself already, he says, "the issue just dies."

—K.S.N.

has worked on cases at Delta Air Lines, Ernst and Young, PricewaterhouseCoopers and SunTrust Banks. "I've yet to meet any C-level person who says, 'I'm so proud that we have 500 people preventing fraud.' It's not what people want to put out there as a badge of honor. It's a necessary evil."

The Sarbanes-Oxley Act, enacted in 2002, was supposed to stop a lot of big crime by giving internal and external auditors new and more detailed safeguards, procedures and processes to check. The regulations encode good base-covering practices and serve as a proxy for good behavior. Lawmakers had an appetite for reform after colossal crimes at Enron, HealthSouth and other companies outraged the public, especially employees of those companies whose salaries and pensions were swindled away.

But 10 years on, we have a new crop of corporate miscreants at whom to rage. Investor Bernie Madoff, now serving 150 years in jail, confessed in 2009 to a Ponzi scheme that defrauded customers of perhaps \$50 billion or more. Last September, investment bank UBS blamed a \$2 billion loss on a rogue trader who was charged with fraud and false accounting. The trader pleaded not guilty and is scheduled for trial this September.

Maxim Healthcare Services recently admitted to \$61 million in Medicaid fraud and agreed pay a fine of \$150 million to the federal government and 42 states. Afterward, the company replaced all its senior executives, including the CIO.

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Sarbanes-Oxley may have curbed some would-be criminals, but companies over-rely on auditors to detect crime, McCormack says. But CIOs can make a dent by aiming technology and policy tools at common kinds of insider threats, he says.

Of all the types of internal fraud, theft of assets—office supplies, computer equipment and so on—is the least costly but still significant, according to ACFE research. Losses in the average case amount to \$135,000, the ACFE says. Corruption schemes, such as bid rigging and kickbacks, cost \$250,000 on average. Financial statement fraud does the most damage, with each case responsible for \$4 million in losses on average.

Technology can help, but CIOs should not hand off the job to project managers doing piecemeal work, says Frank Wander, a former CIO at Guardian Life Insurance, The Harry Fox Agency and the Prudential Institutional Division. Instead, make fraud detection and prevention an organizational mandate exemplified by the ethical, upright behavior of top executives, Wander says. “People do what you do. That’s how the world really works.”

‘Tone at the Top’

If people get the idea that senior leaders don’t pay attention to wrongdoing—or worse, take liberties themselves—they will go along, says Jim Anderson, a management consultant at Blue Elephant Consulting. Ethics, Anderson says, is nothing more than daily decision-making in big and small situations. Rarely does anyone face a “burning building” quandary where there’s no doubt as to the right answer.

“If you’re sitting in your cube and some strange guys with sunglasses show up with metal suitcases full of \$20 bills, you’d say no,” he says. “But what happens instead is that ethical decisions sneak in around the corners of our average day.”

Maybe an employee is late with a project and downloads data to bring home to work over the weekend, Anderson says. The employee knows he shouldn’t because the information is confidential, but he figures he’s breaking the rules for the right reasons. Months later, maybe the job is going sour, so he takes data to be able to defend himself in a poor performance review. Each time, no one says anything about his actions. Maybe they’re not looking at network logs; maybe they don’t care.



Ten years ago, combatting internal fraud wasn’t part of the CIO’s job, says **Kim Johnson**, CIO at Graham Group. But now he says CIOs must get involved in IT fraud controls.

Then things get hostile between the employee and the company, and he takes the work he’s done, intending to quit and find work at a competitor. “It’s a snowball,” Anderson says. “It’s the first ethical lapse that will cause all the problems down the road.”

Wander, who recently founded the consultancy IT Excellence Institute, agrees. “Companies that have trouble don’t have the right tone at the top,” he says, adding that CIOs can influence culture many ways.

For example, at the quarterly town hall meetings Wander held with Guardian’s IT staff, he regularly focused on security issues and safeguarding company data. “Every individual knew it was a divisional priority,” he says. A CISO worked alongside Wander, not reporting to him, to spread understanding of the issues across departments. Companies that separate the roles this way also balance responsibility for the protection of corporate assets, he says. If too much falls to the IT group, other departments may get lax or get the idea that ethics isn’t part of their job. “Address [anti-fraud efforts] in people’s reviews so they understand they are responsible.”

A Neighborhood Watch mentality at work helps cut criminal activity, says Carl Tidwell, CIO of the American Type Culture Collection (ATCC), a nonprofit research center that supplies

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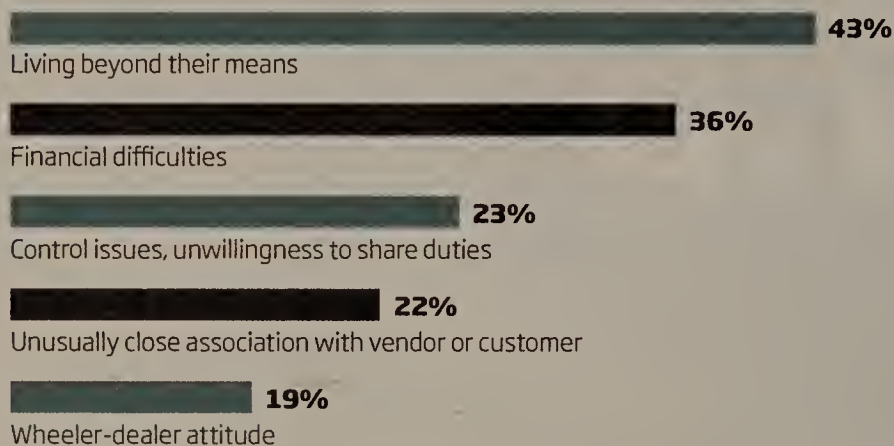
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microorganisms and other materials to life sciences researchers. Tidwell says he tries to educate employees about warning signs, such as people struggling with finances or living beyond their means. That's evidence that humans can see but computers can't, such as the former controller of a Pittsburgh car dealership who enjoyed a mink coat, 10 cars, four homes, gold bullion and a \$32,500 lunch catered by Food Network star Ina Garten. Over six years, the controller falsified accounting records, transferring \$10.2 million from the dealership to her personal bank accounts in 800 transactions. She pleaded guilty in January to wire fraud and is due to be sentenced in May. The dealership did not respond to requests for comment.

Even when companies insert IT controls into their business processes, they too frequently fail to monitor them, says Matt Lynch, a fraud investigator who has worked at Altria Group, a \$21.4 billion cigarette company, and Palmetto GBA, which administers benefits for Medicaid and Medicare. Real live human beings from IT, audit, legal or other groups should be assigned to look at transactions randomly, he says. Often a business that's making money doesn't bother with too much introspection, he says. Or executives don't want to think crime happens at their place. "They think, 'These are people I work with and I trust,'" he says. "I'm sorry, but a lot of people trusted Bernie Madoff. Fraud is just a fact."

Red Flags of a Perpetrator

Looking back at fraud cases, investigators saw that criminals showed warning signs before and during their crimes. Here are the top five:



SOURCE: THE ASSOCIATION OF CERTIFIED FRAUD EXAMINERS STUDY OF 1,843 FRAUD CASES IN 2008 AND 2009

Instilling outright fear, however, works against you because employees become secretive and suspicious of each other, inhibiting collaboration and stalling productivity, says investigator McCormack. A little trepidation, however, can be helpful. Show employees how serious you are, he advises. Write policies that explain what people can and can't do with company data and other material. Create anti-fraud training and give programs at least twice per year. Have employees sign confidentiality agreements, he suggests. "Establish a tone and set of expectations as soon as people walk in the door so they know what the com-

pany does to stop fraud and that they will be caught," he says.

The most damaging thing leaders do is keep quiet when something goes wrong, he says. Routinely monitor the movement of large or sensitive data sets around the network and spot-check where they're going. "All it takes is examining a couple of those transactions and then talking to people about it. Word gets around."

Technology to Close Holes

Word also travels when an organization leaves itself vulnerable by skimping on basic IT controls. Some people will take advantage of what you didn't do, Tidwell says. He remembers well what happened at a former company. He suggested to the CEO that IT block computer ports, so employees couldn't use portable drives, and monitor email for large data transfers. "I was told, 'No, we trust our employees,'" Tidwell recalls. Soon after, a researcher quit, walking away with \$300,000 to \$400,000 worth of intellectual property that he had sent to a personal email account—a delivery method similar to the one the researcher at Sanofi used. This researcher, however, got a job at a competitor and started work using the stolen information.

The rival notified Tidwell's company. "They packed up everything, including his computer, and sent it to us," he says. "The CEO was apologetic [to me] afterwards. He dodged a bullet because the competitor was an ethical company."

CIOs can use IT to reinforce and extend policies and behavior that promote an ethical culture. Wander's philosophy is one of minimum access. "You want people to have the least privilege to get done what they have to get done," he says.

A CIO's hands are tied if a CEO thinks IT controls are intrusive. But new technologies can obviate the need to outlaw some practices, Tidwell says. At ATCC, he is exploring virtualization, which means flash drives won't be an issue, as central servers provide data to authorized users on thin clients. There will be no USB ports on the client hardware, and employees will be able to share secured data. Productivity won't be hampered, he says, and senior leaders won't look heavy-handed.

As employees themselves bring new technology to work, especially smartphones and tablets, detailed and constant education can help mitigate the risks that come with these new devices, says Stephen Laster, CIO of Harvard Business School.

For example, his IT group creates artistic informational posters to hang in common areas where personnel gather. Recent posters focused on three ways to secure a smartphone: use a password, enable location detection so you can find a lost device, and enable remote wiping of its data. Those measures help protect a company's information should the device be lost or stolen. "Training is episodic. You need a continuous, engaging marketing campaign," Laster says.

At Graham Group, a \$1.8 billion construction company, CIO Kim Johnson has tried to set up systems so that emailing large chunks of data to each other isn't the normal way to work. The company recently began developing a collaboration and

workflow system from SAP, in part to eliminate the need for executives to sign off on major contracts via paper or email. The system also helps employees work together on sensitive projects without having to send files to each other. "Fraud prevention is built in during the design of IT systems," Johnson says.

Graham Group is also installing SAP financial applications this year. As soon as the idea germinated to buy and customize the software, Johnson requested that a key person from the internal controls committee participate in the design and configuration. He and the CEO wanted to weave anti-fraud measures into the software beyond what comes

will be suspended pending confirmation from the customer.

Healthcare organizations are also beginning to use big data techniques to uncover suspicious activity, with good results. HMS Holdings, which coordinates benefits and looks for ethical problems for government agencies and commercial healthcare plans, helped recover \$2 billion in costs related to fraud, waste and abuse in 2011, says CIO Cynthia Nustad.

HMS analysts and investigators comb petabytes of data in queries of billions of rows, she says. They use advanced queries and analysis, and will soon be leveraging data visualization—using pictures

"Fraud prevention is built in during the design of IT systems."

—Kim Johnson, CIO, Graham Group

stock from SAP, he says. Top leaders considering these measures before setting up new technology and business processes reflects a more enlightened approach to fighting corporate crime, Johnson says. "We don't want to be one of those bad crime stories in the media."

Next: Predictive Monitoring

For Romney, the IT professor, there are no small corporate crimes, just big ones discovered early. "Once I perpetrate a fraud and get away with it, do I do it just once and stop? No. Human greed is such that if I can take a little, why not take more?" he says. Criminals start by stealing small amounts over periods of time. Then they take larger amounts more frequently. Many times, they get caught.

The next question for CIOs, he says, is, How can we figure out what the really smart criminals are doing?

Beyond detection and prevention lies the possibility of prediction. Credit-card holders know that fraud monitoring systems at banks alert customer service agents to unusual transactions. A rush of purchases of high-end electronics or airline tickets can trigger a call to the credit-card holder to make sure these items are legitimate. Sometimes, a card

and maps of query results—to identify potential fraud faster. "If we can make it interesting and artful, then the number of questions you can answer more quickly is very significant."

Of course, people tend to think that ruinous fraud won't happen to them. That's probably what executives at Barings Bank, a 233-year-old institution, thought before it collapsed in 1995 after a rogue trader lost \$1.3 billion and tried to cover it up. And MF Global, a now-bankrupt brokerage, is under investigation by the Department of Justice and the Securities and Exchange Commission for alleged bookkeeping problems. Trustees estimate that up to \$1.2 billion is missing.

Watching giant companies go down at the hands of insider criminals has provided an education to CIOs willing to learn, says Johnson, Graham Group CIO. "Ten years ago, I'd have said, 'This is not my area.' But now it's very important for me to be involved," he says. "It's another way we're measured: Not just how efficient IT makes a process, but how controlled the process is." **CIO**

Contact Senior Editor Kim S. Nash at knosh@cio.com. Follow her on Twitter: twitter.com/knosh99.

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I would like to add more strategic responsibilities to my social media group, in addition to their typical tasks of activity tracking and observing traffic. I'm also establishing a metrics dashboard so I can correlate new social media initiatives with their outcomes. I know that being active in the social media world has become almost mandatory for companies today, but how much of it is simply hype and how much empirical evidence can you find showing that customer loyalty and company growth can be directly attributed to social media activities? ▶▶▶

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ILLUSTRATION BY ANASTASIA VASILAKIS

JOE YANOSKA, VP AND HEAD OF TECHNOLOGY,
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USE CUSTOMER FEEDBACK TO INFORM NEW PRODUCTS



ADVICE Our company is built around people socially expressing themselves through greeting cards. They are a very passionate consumer base. We use social media for three goals—increasing brand awareness, marketing activity for our brands, and focusing on customer care by listening and responding to user feedback. The majority of our efforts go to building and maintaining Facebook fan pages for each of our brands.

We feel it is important to track comments and ideas shared on the fan pages and use this information to guide us in developing new customer experiences and card content. One example of this is when we changed the tone of an Easter card that was already live because we felt the messaging did not meet the needs of our audience. We came to this conclusion because of conversations we observed on our Facebook fan page. As a result of these changes, this card became one of our most-sent cards last Easter season.

Some of the metrics we track are the number of fans, number of coupon codes redeemed from social media marketing campaigns, and overall level of engagement with our fans. We also monitor user activity from our fan pages. Some of the tools we use are ClearSaleing tracking and Facebook Insights. Over time, I think we will see email campaigns become a smaller part of the customer communication plan and the majority of customer communication will flow through social media.

JIM DIMARZIO, CIO, MAZDA NORTH AMERICA OPERATIONS BE WILLING TO MODIFY CORPORATE POLICIES



ADVICE Mazda has a passionate consumer base, and it really made sense for us to bring the offline conversations owners were already having with each other onto social media sites. If you choose to do nothing, the conversations are still going to happen. You just won't have the audience's affection or be able to influence them. We have two primary constituencies: local dealership franchisees and consumers, who range from first-time buyers to Mazda enthusiasts. Our focus is on four social networks—Facebook, Flickr, Twitter and YouTube—which cover all types of communication, including microblogging, video, still photography and community. Facebook is our hub, and we use metrics such as fan counts and participation to compare our Facebook presence with our competitors'.

We don't have a dedicated social media group, and we view all Mazda employees as our social media team. This was a conscious decision, and we actually reversed an existing corporate policy that required that the PR department have strong command and control of all communication. We wrote new internal policies that empowered employees to get out on social networks as stewards of the Mazda brand. For strategic direction and leadership, we look to Mazda's digital marketing team and two external agencies.

We have been successful using tools such as Scout Labs, Social Mention and Google Alerts for tracking metrics and engagement. But we expect that someday we may need to make a larger investment in developing an internal app to help with tracking engagement and analyzing results.

TAKE Note

Optimize Reorganization

DOWNLOAD Learn what four top-level companies are doing to ensure that reorganization does not mean disorganization. IT professionals are as likely as anyone to invest a tremendous amount of meaning in their titles, their headcount and their reporting lines. CIOs who reorganize too often (or poorly) are in danger of losing talent, damaging morale, and confusing the business. In this panel discussion, *CIO* magazine columnist and executive recruiter Martha Heller talked with IT leaders who have learned the right way to reorganize: Doug Rouso from CBS, Steve Finnerty from Applied Materials, Don Goldstein from CB Richard Ellis, and Ramzi Najm from Allergan. council.cio.com/DL412

Enhancing Transformation

READ In this first installment of the IDG Enterprise CIO Interview Series, Council member Christian Anschuetz, CIO at Underwriters Laboratories, spoke with IDGE Chief Content Officer John Gallant about IT's role in shaping and supporting business change and what it means for him and his organization. Underwriters Laboratories transformed from a non-profit into a for-profit company in the United States this year, and it's focusing on delivering new products and services to its global customers. Anschuetz discussed why embracing consumer technology is critical for amplifying human ability and how IT should be measured for its success in driving customer value and revenue. council.cio.com/CIO412

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Norm Chambers, President and CEO, and Eric Brown, EVP and CIO

NCI BUILDING SYSTEMS

Steeling for a Rebuild

Driven to the brink of bankruptcy, this metal buildings maker is retooling its engineering workflow with IT

Norm Chambers All our products rely on nonresidential new construction, and that market in this country is more than 45 percent below average right now. We've had three consecutive years of decline, and in 2009, we were at risk of bankruptcy. The question was: What are we going to do to survive? And we answered that by asking: What are we going to do with technology?

Because without technology, we wouldn't have been able to reduce the number of plants we had while maintaining all our brands and sales channels.

Eric Brown Starting two years ago, we began rolling out an integrated building-component engineering system. This integrates orders from

drawing up estimates for customers through engineering details and ultimately to the computer-controlled machines that cut and shape steel on plant floors. Totally automated—no manual hand-offs and no disconnects.

Chambers The notion was to get to a point from a technology perspective where any one of our plants can fabri-

cate for any one of our 10 brands. We can look at where a building is to be delivered and make the components in the plant closest to the delivery site. This hub-and-spoke approach is transformational for us. Half the manufacturing costs have gone away, but we can still produce with eight plants what we used to do with 16.

Brown Every county's building codes are programmed in. Before, those had to be looked up in books. We've automated clash detection, when components of a building overlap in ways they shouldn't. Engineers can fix those on the fly, and the system will redraw the building with the corrections. All the information automatically downloads to the machines that cut and bend steel. Before, you'd print bills of materials and designs, and everybody would have to work from those printouts and drawings.

Chambers The engineering system has sped up our delivery and improved quality. Customers used to have to wait weeks to get their drawings; we can now provide them in five days. No one else can do that. All those things would not have been possible if not for our commitment to IT as a strategic part of our business.

Brown This has been a conservative industry, but younger people are taking over the family businesses we work with, and they—along with the people we're hiring—are looking for applications that will run on mobile platforms. We've got to keep up, and we're rewriting our engineering system for low-complexity buildings so it can run on iPads and Android devices.

As told to Rick Pastore, VP of Editorial and Programs at the CIO Executive Council.

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Virtual Visiting Hours

For parents who want to show off their newborns to friends and family, hospital visiting hours can be a bit limiting. Tely Labs, a maker of video calling systems, and TVR Communications, a provider of bedside applications and AV products, recently launched TelyHD, a video calling system that allows new parents to communicate with loved ones from their hospital rooms. The system relies on Skype, requiring users to have a Skype ID, and runs over a Wi-Fi connection, using a flat-screen HDTV as a monitor. The patient uses a bedside remote to control everything, including adjusting the pan, zoom and tilt of the camera, which sits atop the monitor. TelyHD is being piloted at several hospitals this year; the first test takes place in a New York maternity ward. Sreekanth Ravi, CEO of Tely Labs, says the company hopes to expand the system to allow doctors to video chat with patients at home. "The doctor is not always able to check in on patients," he says. "Having a system like this facilitates this communication in HD."

—Lauren Brousell



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